Original Article

Partnerships for organizing blood donation camp: An experience from rural North India

Shashi Kant[1], Sumit Malhotra[1], Farhad Ahamed[1], S. Archana[1], Chandrakant S. Pandav[1]

[1]Centre for Community Medicine, All India Institute of Medical Sciences, New Delhi, India

Abstract

Background: Rural areas pose challenges for motivating villagers to donate blood. We organized a blood donation camp in a rural setting by engaging multiple stakeholders. We examined the factors that influenced blood donation. **Methods:** Local level stakeholders were involved in planning of the camp. Mobilization of donors was attempted through intensive awareness generation activities utilizing multiple channels. A list of willing blood donors was prepared. **Results:** Out of 152 willing donors, 88 reported to donation camp, and after screening, 67 donated the blood. Most of the willing donors were males (89.8%), and the mean standard deviation age was 31.9 (9.4) years. Deferral rate was 23.8%. Involvement of local stakeholders can result in creating a pool of donors in rural area which can mitigate the existing gap between demand and supply of blood in India.

Keywords: Blood donation, partnerships, rural North India

Introduction

Human blood is one of the most important constituents of life which cannot be substituted with artificial materials. The use of whole blood is a frequently required measure in major surgeries and emergency care of trauma patients. Millions of lives are being saved every year with blood transfusion.

Against an annual demand of 12 million units, in India, 9 million units were collected, of which 70% was from voluntary blood donors while the remaining 30% was from family or replacement donors.[1] According to the protocol specified by the Government of India, 25% of all blood collected by a blood bank had to be kept aside as buffer stock to be used only in case of an emergency.[2] However, out of India's 2433 blood banks, only 20% were able to maintain the buffer stock.[3] An adequate and reliable supply of safe blood can be ensured by a stable base of regular, voluntary, unpaid blood donors. Voluntary donors are the safest group of donors as the prevalence of blood-borne infections is lowest among this group.[2] The World Health Organization (WHO) estimates that resource-limited countries can meet the clinical demand if 10–20 whole blood units per 1000 population are collected each year.[4] In some developed countries, the number of voluntary blood donors was high, for example, in Switzerland where the number of voluntary blood donors per 1000 population was 113, and in Japan, it was 70. However, in India, it was low, 8 for every 1000 population.[1] In rural India where almost 70% of the population resided, voluntary blood donation was low (21–37%, out of total blood units collected).[5] A study from rural Indian community reported that more than half of the participants were not willing to donate blood among who were aware about voluntary blood donation in view of belief of not having enough blood.[6] Voluntary blood donation practice is still uncommon in many parts of the country. There exists a need to find out the feasible approaches for enhancing blood donation rate in rural areas.

Address for correspondence: Dr. Sumit Malhotra, B-3/84 A, MIG DDA Flats, Keshav Puram, Lawrence Road, New Delhi - 110 035, India.
E-mail: drsumitaiims@gmail.com

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Here, we report our experience in organizing a blood donation camp in a rural setting of North India through a primary health centre (PHC) by engaging multiple community level stakeholders, and secondarily examine the factors that influence blood donation.

Methods

Study setting

The blood donation camp was organized in the Chhainsa village of Faridabad district, Haryana. The village had a PHC, which was run by Centre for Community Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi. Total population served by this PHC was approximately 47,000 distributed across 11 villages. The village level health workers made fortnightly domiciliary visits to each and every household for service delivery and collection of vital event information. The present camp was organized in collaboration between PHC Chhainsa and blood bank of AIIMS, New Delhi. The blood donation drive was primarily done as a part of health promotion activities, regularly supported by CCM. The blood bank, AIIMS, has a mandate to support such initiatives of blood donation camps and later to demand of blood on a regular basis. The blood collected during the camp was transported to AIIMS blood bank located at New Delhi. The AIIMS blood bank mostly organizes blood donation camp in urban Delhi. The rural camp was a feasibility exercise to promote awareness among rural inhabitants about blood donation and its uses.

Preparatory activities

A meeting was organized, in which the village level stakeholders including village level health workers, village youth organization representatives, media persons, and village headman participated. Decisions regarding date, venue, and implementation plan for the blood donation camp were finalized as a part of this meeting. Pamphlets, posters, banners, and dissemination of messages by word of mouth were used for generating awareness about the event. One week before the scheduled date of blood donation camp, the government had declared an Intensive Pulse Polio Immunization (IPPI) round. Health workers were required to make house-to-house visit during IPPI mop-up day. While making house-to-house visits on the mop-up day, the health workers also prepared a list of willing donors.

Roles and responsibilities of stakeholders

Different stakeholders and their roles are shown in Figure 1. Village level youth organization, engaged as equal partners, arranged the venue (community guest house within the village) for holding the camp. The local village chief extended the support for this event. All the health workers, community grass root workers - accredited social health activists, local political leaders, and local youth organization were involved in mobilizing willing donors. PHC staff prepared posters and banners in local language (Hindi). Pamphlets included information about eligibility criteria for blood donors such as age, weight, and controlled hypertension. Alcohol use being common in the study area, nonconsumption of alcohol for 48 h prior to donation was also emphasized to the potential donors. Local media persons such as local newspaper dealer, reporter, and cable television operators were roped in to disseminate information about planned blood donation camp, eligibility criteria, and dos and don'ts for blood donation. To spread awareness, rallies, and health

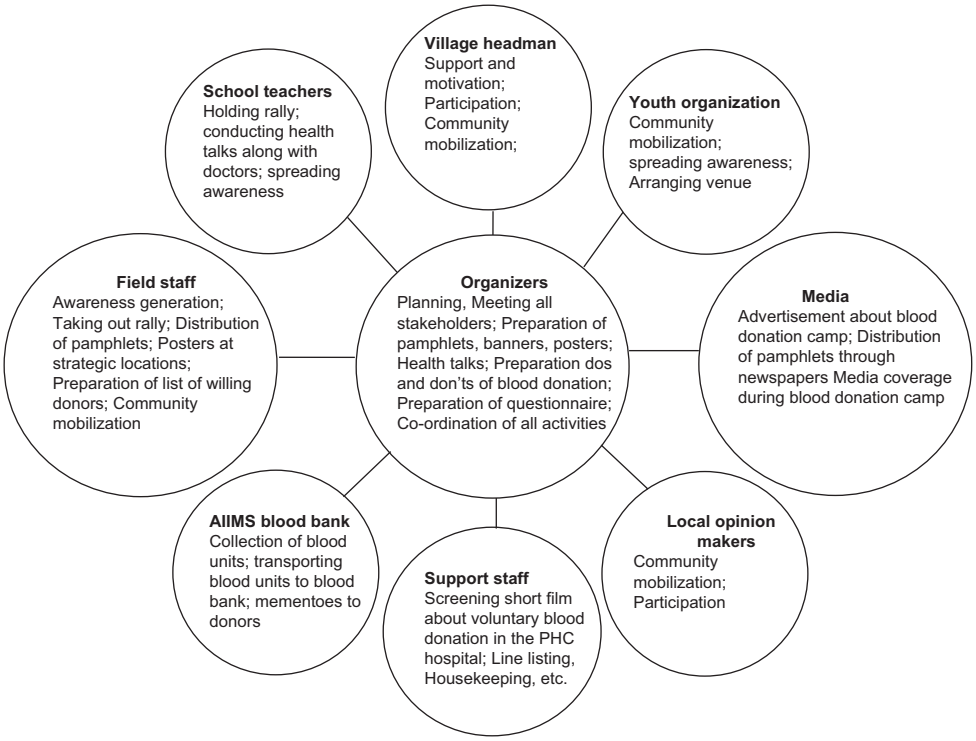

Figure 1: Roles and responsibilities of various stakeholders

talks were held involving school children, teachers, and doctors in all the PHC villages. Short films about blood donation were also screened in the PHC premises. A short semi-structured interview schedule was developed and administered to those who came for blood donation.

The blood donation camp was held on January 25, 2015. Blood donation mobile van of AIIMS blood bank was utilized for holding this event. Staff from AIIMS blood bank was deputed for collecting blood units. Standard screening protocol was followed prior to donation. Hemoglobin level was measured by Hemocue method.[7] A semi-structured interview schedule was administered to those who reported to the blood donation camp. As a token of appreciation, mementoes were given to blood donors. Gantt chart of activities conducted for blood donation camp is depicted in Figure 2.

Data were entered in Epi Info version 7.1.5. (Centers for Disease Control and Prevention, Atlanta, USA) and imported into Microsoft Excel. Data were analyzed in STATA Statistical Software: Release 12 (STAT 12, StataCorp., 2011, College Station, TX, USA: StataCorp LP).

Compliance with ethical standards

Informed written consent was taken from all the willing donors who attended blood donation camp.

Results

A list of 152 potential willing donors was prepared as a part of preparatory activity precamp, of which 88 turned up at the blood donation camp. After screening, 67 were found to be eligible for blood donation. The flow of participants is given in Figure 3. Mean age standard deviation (SD) of the willing donors who attended the camp was 31.9 years (SD 9.4). The willing donors were predominantly males (89.8%). Sociodemographic characteristics are presented in Table 1. Mean (SD) weight, height, and hemoglobin level of the willing donors were 73.8 kg (13.1), 169.2 cm (6.9), and 14.5 g% (1.6), respectively.

Figure 2: Gantt chart of activities conducted for blood donation camp

Period (January 2015)	1st week	2nd week	3rd week	4th week
Activity				
Micro planning				
Meeting with stakeholders				
Awareness generation[a]				
Line listing of willing donors[b]				
IEC activities[c]				
Involvement of media[d]				
Blood donation camp				25/01/2015

[a]School rally, announcement using public address system in all PHC villages, visiting various colleges and nearby factories, informing prominent community members, Sakshar Mahila Samooh or educated women group members, etc.; [b]Along with IPPI and during awareness generation; [c]Preparation of slogans for pamphlets, posters, banner, distribution of IEC materials, screening short films, health talks at all subcenters, and atleast one school in each village; [d]Print media, electronic media, and local television cable operator. IEC: Information, Education, and Communication; PHC: Primary Health Centre; IPPI: Intensive Pulse Polio Immunization

Majority of the willing donors got information about the blood donation camp from mass media advertisement (35.2%) and health workers (19.3%) [Table 1]. Distribution of willing donors according to their knowledge related to blood donation is shown in Table 2. Among the willing donors, 49 (55.7%) had donated blood earlier, mostly voluntary donations. When the donors were asked about the factors which motivated them for blood donation, the responses were "for other's benefit" (n = 63), "I like it" (n = 12), "for own good" (n = 12), and one of the responses was "motivation by friend." Majority (62.5%) were aware about their blood group. As depicted in Table 2, there was low awareness about the contraindications for blood donation in this group of willing donors.

Discussion

We described here our experience in organizing a blood donation camp in a rural setting through partnerships. Synergies were obtained from community youth organization, village chief, influential community members, school teachers, students, health workers, and AIIMS blood bank. We found that most of the donors (63.6%) were in the age group of 25–44 years, a finding similar to high-income countries where 25–44-year-old donors constituted ~40%. A global study by the WHO reported that in low-income countries, as well as in India, most of the donors (53%) were in the age group of 18–24 years.[8] An Indian study also reported that most of the donors were in the age group of <25 years.[9] Higher proportion of young donors in other studies could be due to the location of blood donation camp which typically targets educational institutions in urban area.

Low level of awareness among middle-aged people may be another reason for their lower representation as seen in many Indian studies. In a study done in Uttarakhand, India, almost 45% responded that they had not donated blood because of lack of awareness.[10] This opens up a possibility of increasing voluntary donation if we focus this willing but unaware population group. Our study finding indicates that by creating awareness, blood donation by persons aged 25–44 years can be increased. This age group has largely remained untapped even in urban area.

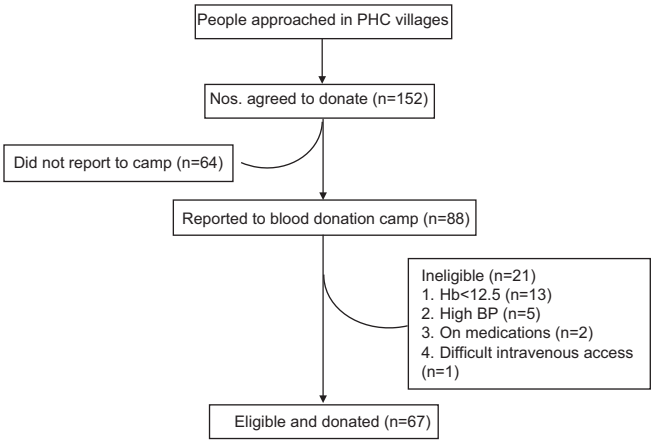

Figure 3: Flow of participants in the blood donation camp

Table 1: Sociodemographic characteristics of persons who reported to the blood donation camp (*n*=88)

Variables	Number	Percentage
Age (years)		
18-24	21	23.9
25-44	56	63.6
45-64	11	12.5
Sex		
Male	79	89.8
Female	9	10.2
Education (class)		
0-8	11	12.6
9-10	28	31.8
11-12	24	27.3
>12	25	28.4
Occupation		
Agriculture	28	31.8
Self-employed	22	25.1
Private job	13	14.8
College student	9	10.2
Others	16	18.1
Main source of information		
Advertisement	31	35.2
Health workers	27	30.6
Youth organization	17	19.3
Others	13	14.8

Table 2: Distribution of persons who reported to the blood donation camp according to their knowledge about blood donation (*n*=88)

Variables	Frequency	Percentage
Knowledge about blood group		
Yes	55	62.5
No	33	37.5
Can donate after smoking		
Yes	23	26.2
No	65	73.8
Can donate after drinking alcohol		
Yes	21	23.9
No	67	76.1
Contraindications for donation*		
Tuberculosis	30	34.1
HIV/AIDS	18	20.5
Jaundice	13	14.8
Cancer	13	14.8
Others	15	17.0
Don't know	22	25.0

*Multiple responses possible

Education probably acts as a facilitator for blood donation since most donors in our study were educated. Similar findings were reported from a study done in another state in North India (Sikkim).[11] We feel that successful motivation of people in middle age group was possible because of intensive information, education, and communication approach, translating into desirable behavior related to voluntary blood donation.

Most of the donors were males, and male to female ratio was 9:1, similar to another study.[9] A study done in Greece reported 2:1 sex ratio for voluntary blood donation.[12] Cultural background, social myths, and misconceptions may be responsible for a low proportion of women volunteering for blood donation. Female blood donation which remains a challenging task also needs to be encouraged. In our study, most common occupation of the donors was agriculture (31.8%) followed by self-employment (25.1%). An Indian study had reported that students and self-employed persons were the most common donors.[9] The proportion of students among donors in our study was low (10.2%). It is possible that the timing of blood donation camp was not suitable for students. A separate strategy may be required to ensure better participation of students. In a study done in Hong Kong, it was noted that fixed and frequent camps were required to increase the awareness and donation among youth.[13]

We found that 21 (23.8%) willing donors were ineligible for donation. Two other studies had shown similar deferral rates.[14,15] Common causes of noneligibility were low hemoglobin level (14.7%) followed by high blood pressure (5.6%). In a study conducted at a tertiary hospital, the main reasons for deferral were consumption of medication in the past 72 h (15.15%), hypertension (13.18%), low hemoglobin level (12.34%), and alcohol intake in the past 72 h (12.20%).[9] Many studies across the globe have cited hypertension and anemia along with other factors as reasons for deferral of willing blood.[16-18] We feel that given the prevalence of anemia in rural Haryana (52.6% of population aged 20 years and above were anemic),[19] screening for anemia may be done as soon as willingness for blood donation is obtained. Those found anemic may be referred to a health facility for proper management. The blood donation rate in India was 8/1000 which was much below the rates observed in many of the developed countries such as Switzerland and Japan. The WHO recommends collection of 10–20 units of blood/1000/year.[4] We should, therefore, aim to collect 470–940 units annually in our area, considering PHC served a population of 47,000. Organizing repeat blood donation camps in different villages could be attempted similarly. With time, it is reasonable to assume that the awareness level would improve and thus, help in achieving the target.

Among the willing donors (n = 151), almost half (n = 88) turned up to donate blood. Similar findings have been reported by others.[20,21] Ascertaining the reasons for dropping out and addressing those factors might help in increasing the blood donation. From the line list of willing donors, one could preferentially invite those persons who did not come for blood donation to participate in repeat blood donation camp. However, efforts must continue to recruit new donors and motivate previous donors for repeat blood donation. We envisage creating a registry of voluntary donors, which would be a future resource for community at times of need.

Authors were encouraged by the response of rural residents and plan to hold repeat blood donation camps not only in this

village but in other villages served by the PHC. The objective is creating a pool of repeat donors as well as to continue to strive to recruit new voluntary blood donors. Though our experience was limited in terms of single event, we believe that such blood donation camps in rural areas can be organized successfully in other rural areas as well.

Conclusions

We demonstrated that a PHC can become a nucleus in organizing blood donation camp in the rural area. The response of rural residents in voluntary blood donation was satisfactory. There are more than 25,000 PHCs in rural India. Even if a small proportion of them could organize similar blood donation camps, it would go a long way in bridging the gap between demand and supply of blood that currently exists.

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Conflicts of interest

There are no conflicts of interest.

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